Menlo Park Notebook #160 [N-80-06-16.2]

This notebook was probably used on September 23 and September 24, 1880 to record tests made by Edison, Francis Upton, Francis Jehl, and Sigmund Bergmann of gas jets at Bergmann's factory. (See Charles P. Mott's entries of those dates in Menlo Park Notebook #117.) Included also are references to books on gas lighting and a clipping relating to gas light tests made by the New York Department of Public Works. The label on the front cover is marked "Gas." The book contains 282 numbered pages. The last page has been torn out of the book.

Blank pages not filmed: 24-195, 198-235, 238-239, 242-253, 260-273.

WEDNESDAY, JUNE 16, 1880.

Official Report of Examinations of Gas for two Weeks ending June 5, 1880, made at the Photometrical Room of the Department of Public Works.

Corrected Illuminating Power.

May 1880.	Time of Day at which Test were made.	New York Gas-Light Co.	Mutual Gas-Light Co.	Mutual Gas-Light Co.	Metropolitan Gas-Light Co.	Harlem Gas-Light Co.	Metropolitan Gas-Light Co.
		*	*	†	*	*	†
24	Between 9.30 A.M. and 1 P.M.	25.65	20.18	26.12	22.30	18.90	29.27
25		24.26	20.26	27.08	22.55	19.29	28.24
26		27.61	20.33	25.00	21.82	19.22	28.28
27		23.41	20.42	25.38	22.01	19.00	28.92
28		24.18	20.14	26.26	21.04	18.60	29.08
29		24.52	20.48	26.32	21.59	18.15	29.15
	Average	24.83	20.29	26.23	21.88	18.77	28.82
31							
June 1		23.31	20.44	25.96	21.24	18.43	29.12
2		19.05	20.36	25.62	21.19	17.96	29.13
3		20.38	19.80	25.08	21.73	17.62	28.72
4		21.84	19.95	25.27	21.65	18.51	28.55
5		24.88	19.84	24.54	22.82	17.90	28.49
	Average	21.89	20.06	25.29	21.71	18.08	28.80

* Five foot Iava tip with check.
† Bray's slit union, No. 7.

E. G. Love, Gas Examiner.

This formerly as one of the employees of the

1

Goodwin Meter Co 142 Chambers.
Photometers, Pressure Guages etc

American Meter Co 512 W 22nd

Kings Treatise on Coal gas &c.
A M Callender, & Co 42 Pine

Ask Price Amn Gas Lgt from
Commencement to date, 32 Vols —

WEDNESDAY, JUNE 16, 1880.

Official Report of Examinations of Gas for two Weeks ending June 5, 1880, made at the Photometrical Room of the Department of Public Works.

Corrected Illuminating Power.

May	Time of Day at which...	...rk Light Co.	...ian Light Co.	...ight Co.	...litan Light Co.	...ight Co.	...al Light Co.
5		24.88	19.84	24.54	22.82	17.90	28.49
	Average	21.89	20.08	25.29	21.71	18.08	28.80

* Five foot lava tip with check.
† Bray's slit union, No. 7.

E. G. Love, Gas Examiner.

LIBRARY OF THE

BOARD OF PATENT CONTROL,

120 BROADWAY, NEW YORK.

From Library
GENERAL ELECTRIC.
44 Broad St. NY

May 1, 189[illegible]

Goodwin Meter Co 142 Chambers
Photometers, Pressure Guages etc

American Meter Co 512 W 22nd St NY

Gas and Water Co Directory [illegible]
London - Orders recd Amn Gas L. Journal

Cathels, Gas consumers [illegible]
42 Pine st Room 18. [illegible] Gas L. Journal
A.M. Callender & Co

Fordell's System Gas Bookkeeping
$5 = See if we haven't got [illegible]

Kings Treatise on Coal gas [illegible]
A M Callender & Co 42 Pine

Ask Price Amn Gas L Jnl from
Commencement to date, 32 Vols —

We are prepared to furnish to GAS MANAGERS and others interested in the topics treated of, the following Books, at prices named:

GAS MANUFACTURE, by WILLIAM RICHARDS. 4 to, with numerous Engravings and Plates, in Cloth binding. $12.

THE GAS ANALYST'S MANUAL, by F. W. HARTLEY. $3.50.

ANALYSIS, TECHNICAL VALUATION, PURIFICATION AND USE OF COAL GAS, by Rev. W. R. Bowmont, M. A., with Engravings. 8 vo Cloth. $4.50.

NEWBIGGINS HAND BOOK, by THOMAS NEWBIGGIN, C. E. $3.75

GAS CONSUMERS HAND BOOK, by WM. RICHARDS, C. E. 12 mo. Sewed. 50 Cents.

GAS CONSUMERS MANUAL, by E. S. CATTERS, C.E. 50 Cents.

PRACTICAL TREATISE ON HEAT, by THOMAS BOX. Second edition. $5.

AIR AS FUEL, OR PETROLEUM AND OTHER MINERAL OILS UTILIZED BY CARBURETTING AIR, by Owen D. Ross, Member Institute Civil Engineers. 8 vo. Cloth. $1.50.

The above will be forwarded by Express, upon receipt of price.

We will take especial pains in securing and forwarding any other Works that may be desired, upon receipt of order. All remittances must be made by Check, Draft, or Post Office Money Order.

A. M. CALLENDER & CO.,
Room 18, No. 47, Pine Street, N. Y.

18/10		730 ½ line Rad 1 foot
	16 9	732. 45-sec
5 on.	15 7/8	10 Rad 5 feet.
9	15 1/2	
9		
10.		
11		
12	15	
14	14/10	
15		
16		
17		
18		
19.		
20	13/10	
21		
22		
23.		
24.	12/10	
25		
26		
27.		
28		
29		
30	11/10	

At Bergmans. 4th story 50 feet.
pressure measured with a pressure U shaped bought at Goodwins was.
18/10 this =

Upton turned off slightly at meter gauge 14/10 very noticable denumination in size of jet and light, latter very considerable = 5 lights were on we noticed that all jets were set vibrating about 300 per min. —
Could hear no sounds. —

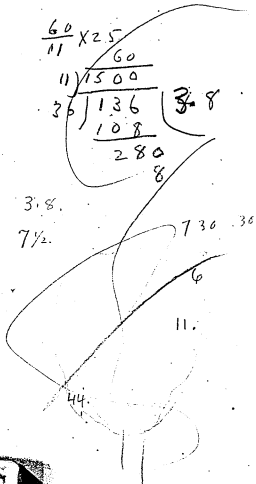
Bergman put on grandually light by light (5 on) up to 30. when 5 were on the pressure was 18/10 - when 12 Extra added 15½/10 14 on 14/10
20 added 13/10 — 24 added 12/10
30 added 11/10. This made no change in fuiet jest except to reduce its size and amount of light

$\frac{60}{11} \times 25$

$$\begin{array}{r} 60 \\ 11\overline{)1500} \\ 36\overline{)136} \\ 108 \\ 280 \\ 8 \end{array} \quad 3.8$$

3.8.

7½.



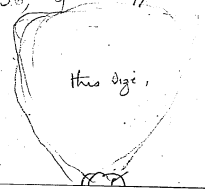
36 Lights on Upton reads
Gas Co's Meter =

7.30½ pm.	Meter reads	1 foot.
7.32. 45 sec.	Reads 6	feet
7.34 . 55 -	" 11	feet
7.37 .5	16	"
7.39 .20	21	"
7.41 .30	26	"
7.43 45.	31.	

25 feet 11 minutes. in 36 burners, – or 3.8 per burner per hour on looking ~~[illegible]~~ we find that the average jet with all on (10) 36, gave 7½ candles.

Size of jet

This was not streaky from high pressure but apparently at the best point for greatest light,



PM —

8.29. 30 — our Meter reads 1/2 foot.

8.34. 6-Burners special " 1 "

8.43. Lava tip " 2 "

8 59. 45 " 4

- Foot ~~test~~ 16 candles —

2 15@16.

9.17 6

9.30 7 1/2

Pressure ~~[illegible]~~ at meter at 8.38,

20/10 - ditto 9.17 -

Sizing flame

3 high 3 broad

15@16

7 feet per hour

2

9

5

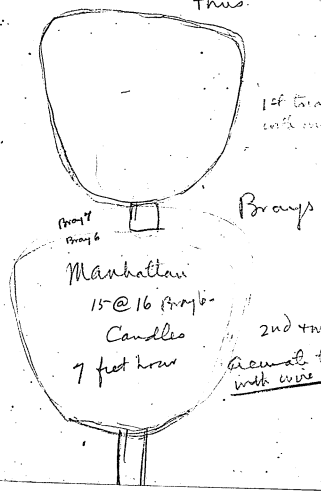
1 1/2

7 1/2

7

Francis Benedo a wire to pass over Edges flame

thus



8 lbs 1050
7000

1.10

66

22

550 - 6

6

21 2½
21 5
21 7½
63 3

Pressure at 9.32 - 20/10
1010
10.10
19/20

Measurement with Brays slit-union 10.47 -

9.40. Meter reads ½
9.52 30 " 2

23 Cand Pos - 1st test -

10.01. 3.
1010 4.+

21 @ 22 2nd test, candles

1026. 6.

23 @ 24 3rd test

1040 - 7½

just 7 feet

Porcy Shelley Mary

actual size by
wire.
21 @ 23 Candles,
7 feet high

7 1/2
6 1/2
6 1/2
19 1

19 13 1
1 26 2
17 52 4

7 mm 1/2 3 1/3
1
14 2 7
4 1
28
56

12 3 8
34 47 16
9 2
13 1/2

Brass 2 hold burner

Bergmann ~~[illegible]~~ burner been working 4 months - Same one that gave 4 candles when 36 lights in + 11/10 pressure now have 19/10 pressure - @ 17/10

1048. Zero

7 @ 8. Candles -

1055 1/2 foot
1101 1

8 @ 9 Candles - pressure 17/10 2nd test.

1107. 1 1/2

7 @ 8 Candles

1126 3

8 @ 9. candles with opal 3 candles

Pressure. 16 3/4/10

1139. 4 feet
1148. pressure 16/10. 4 6/10 feet

24.

5.

12.

110

8.

Brays Union Slit 1907.

Made it. 15 candles,

Pressure - 15/10.

1210	Reads - 3/4 foot
1218	$1\frac{1}{2}$
1223.	2
$1229\frac{1}{2}$	$2\frac{1}{2}$
1235	3.
$1240\frac{1}{2}$	$3\frac{1}{2}$

2nd test 22 candles. [illegible]

1252	$4\frac{1}{2}$

3rd test 15 candles.

6 feet

10 9 am -

27/8.

4 | 44
11.

3 1/4.

1

4. 44
7 | 176
25.

27 8.

5.30 sec 1/2

23.

28.

1/4

7.

1/4 .4.

1

13.

Suggs London Argand. stand and up as high as it will go without smoking
Reaches ready to hop

am
1.39 - 30 Reads 1/2

1st test 18 @ 19 - Cand Pos
1 45. 1
1 49 1/2 1 1/2

6 feet per hour

We now put it down to what the public would use it.

Measures 14 Candles

1.55. 30 - Zero
202 1/2
208.30. 1

72

111111

11

23.

5

16.

1 1/2

4

210 am. Pressure 15/10

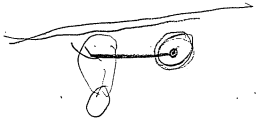
~~Lighted 36 gets and stays~~
~~Burns 4 hrs & fell to~~

Bergmann's new Lava tip burner
just bought

231	30	Reads	1/2
237	15		1
	12 @ 13 Candle		1 1/2
242	15		2
247	45		2 1/2
254	30		

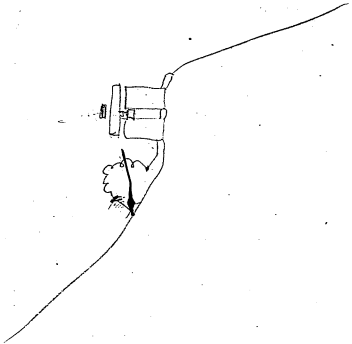
With Opal Globe - 2 candles
without 12 @ 13.

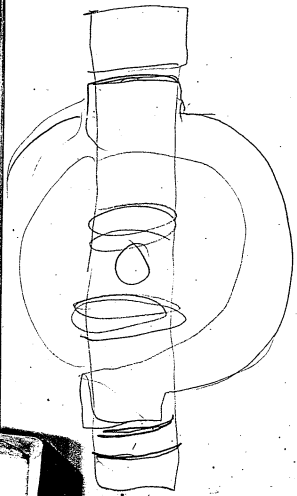
probably 4 Candles as it
throws some of [illegible]



$$S = v$$

$$S = \left(v + \tfrac{1}{2}\mu t\right)t$$

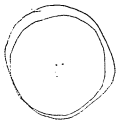




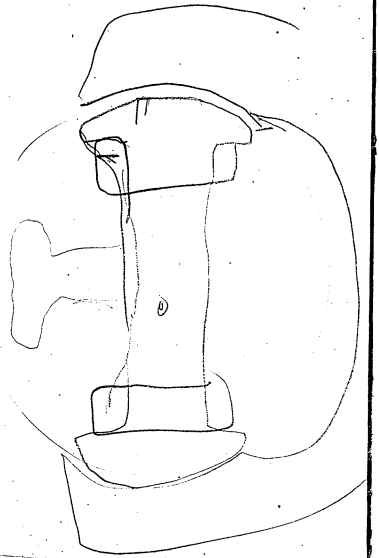
21.

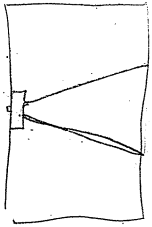
$4\frac{1}{2}$

45



18.





1000
33
967

967 : 33 :: x : .0187
33

.0187 4
.0967 6
1309 2
1122 1
1683 1

33) 18.0829 (.57
165
250
2

$$\frac{967}{33} = \frac{x}{.0187}$$

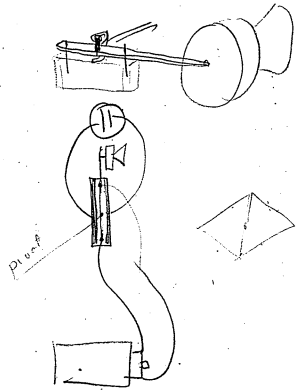
967 × .0187 = 33x

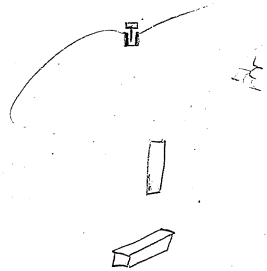
1000
357
643

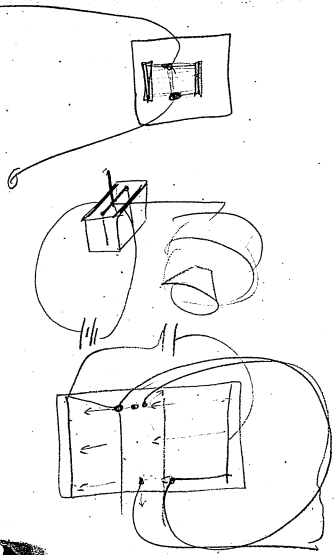
643 : 357 :: x : .0187

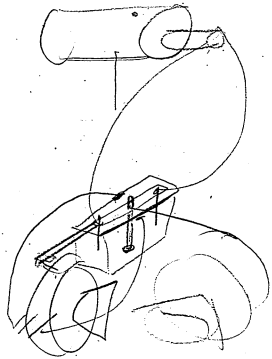
.0187 4
643
561
1748 2

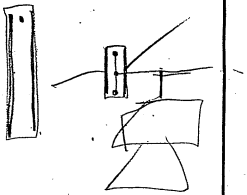
.357) 12.0874 1 (.03
071

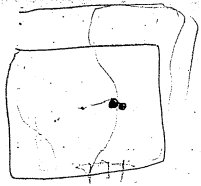

proof











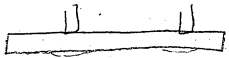
8 | 400,000 00
150,0000

100 000.

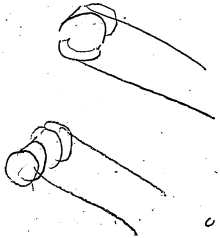
4

1.5

40



5



0 | 0